**Northern New York Agricultural Development Program
2018 Project Final Report**

Extending the NYS IPM Western Bean Cutworm Trap Network Farther into Clinton and Essex Counties

Project Leader:

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- Sara Bull, Cornell Cooperative Extension of Clinton County, Plattsburgh, NY
- Carly Summers, Cornell Cooperative Extension of Essex County, Lewis, NY

Background:

Northern NY has been a hotspot for Western Bean Cutworm (WBC) a destructive pest of field corn, sweet corn and dry beans across the US. WBC originated in the North Central US and has been moving eastward for a couple decades. Western Bean Cutworm was first detected in NYS in 2009.

In 2010, the NYS Integrated Pest Management (IPM) Program developed a WBC pheromone trap network to monitor its population and dynamics. This network of Cornell Cooperative Extension (CCE) Educators, crop consultants and agricultural professionals has since deployed bucket pheromone traps to capture moths during July and August each year. Each week the number of moths are counted and reported to NYSIPM staff. Trap data is used to understand moth presence and the timing of peak flight. Traps help identify fields at risk and when scouting should begin; scouting determines when insecticide is appropriate.

CCE educators and specialists in the western counties of Northern NY quickly became

accustomed to seeing extremely high numbers of WBC moths and ear damage resulting from their larvae, however, Clinton and Essex counties, with just 2 or 3 traps, typically trapped just a few moths, so corn growers and consultants did not consider WBC to be an important concern.

Mike Hunter, Kitty O'Neil, Harry Fefee and Joe Lawrence made the observation after a few years of trap monitoring in the western NNY counties that trap catches can vary widely over just a few miles. For example, in 2017, Mike Hunter's Calcium, NY, trap caught a total of 470 moths for the season. Not a small number, but nearby in Rutland, a trap caught a total of almost 2,500 moths, the highest in all of New York State in 2017. Put another way, one trap really does not represent the full picture for a large area. We realized that just 1 or 2 traps for all of Clinton County and 1 in Essex County could be missing important variation and population size. With that idea in mind, we identified a goal to expand the WBC moth trap network in Clinton and Essex counties.

Methods:

Regional CCE Specialists and County CCE Educators in Clinton and Essex counties identified suitable and meaningful WBC trap locations for the 2018 growing season and communicated with farms to permit trap installation. Areas with dense corn acres were prioritized. Traps were installed in early to mid-July 2018. NYSIPM supplied lures and materials for these new traps for 2018.

Sara Bull installed traps in corn fields in Beekmantown, Champlain, Chazy, Ellenburg, Mooers and Peru, NY, in Clinton County.

Carly Summers installed WBC traps in Westport and Willsboro near corn fields in those Essex County locations.

During July and August, traps were monitored weekly and counts were communicated to NYSIPM for inclusion in weekly reports and discussions among CCE agronomy and horticulture IPM groups. Corn fields adjacent to traps were also scouted for WBC egg masses and for ear damage later in the season.

Results:

Northern NY was again the hotspot in the state for WBC reporting in 2018, with 22 of the highest 25 moth trap catches statewide.

Trap counts in the new Clinton and Essex County WBC Trap Network locations revealed some large WBC populations and indicated that WBC are present at levels that may be problematic for some farms and fields.

The Chazy trap caught the 5th highest total number of moths in the whole state, behind North Lawrence (St. Lawrence County), Moira (Franklin County), Ellisburg (Jefferson County), and West Bangor (Franklin County) traps.

The Beekmantown, Champlain and Peru (Clinton County) traps were all in the top 20 of 118 NYS locations monitored in 2018.

Essex County traps caught fewer moths, but additional traps are planned for 2019. Figures 1, 2 and 3 show NYS trap count data for 2016, 2017 and 2018 for comparison. Table 1 lists trap totals for all 45 traps monitored in NNY.

Conclusions/Outcomes/Impacts:

The expansion of the WBC traps into more eastern NNY fields shows that the range of the WBC is expanding or has gone undetected with so few monitoring traps deployed in previous seasons. Field scouting this summer in Clinton County documented corn fields with nearly 20% of the ears infested with WBC larva. These observations suggest that the WBC populations are reaching levels that will require future management of this insect pest for all of NNY.

Outreach:

The 2018 WBC Trap Network count results were disseminated weekly through established NYSIPM and CCE communication channels including websites, newsletters and e-bulletins. Problems with high populations or above-threshold scouting results were shared with area farmers. Winter meetings in early 2019 will be used to communicate these important findings.

Next Steps:

The new traps will continue to be used, in 2019 and beyond, as we learn about this pest and continue to develop best management strategies.

For More Info:

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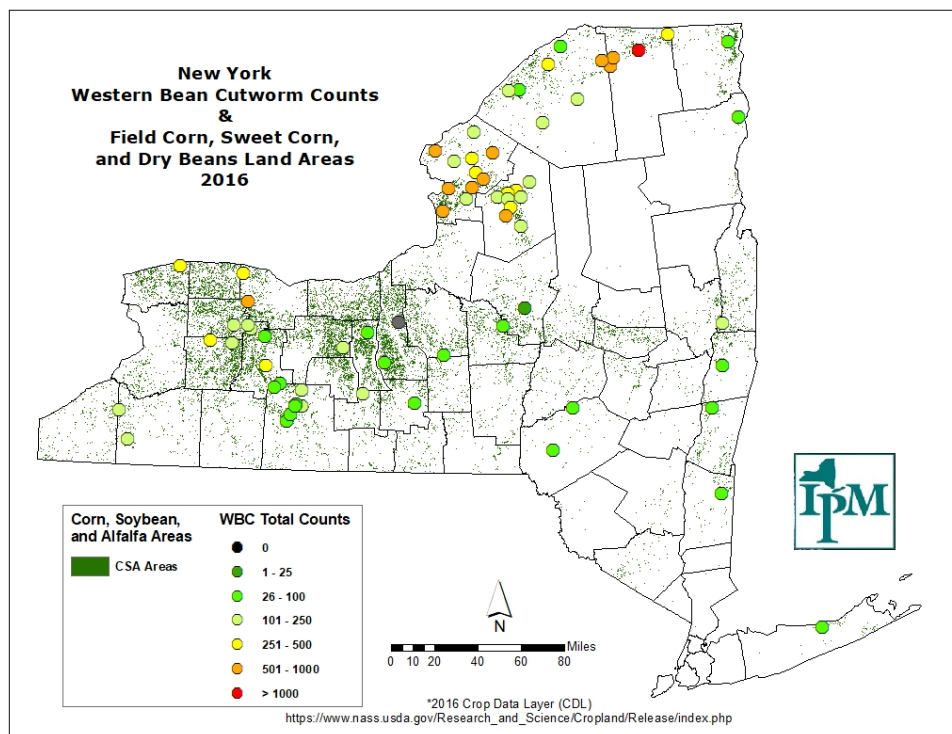
Figure 1. 2016 Western Bean Cutworm moth trap catches across New York State. Jefferson, Lewis and Franklin Counties had high trap counts. Just 2 traps were monitored in Clinton and Essex Counties
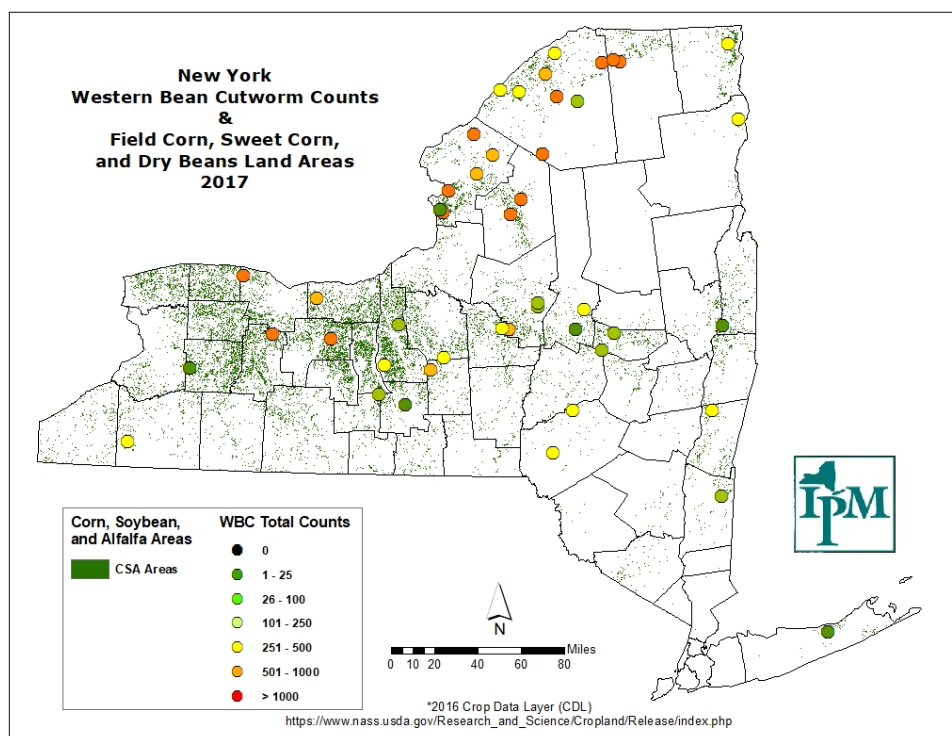

Figure 2. 2017 Western Bean Cutworm moth trap catches across New York State. Jefferson, Lewis, St. Lawrence and Franklin Counties had high trap counts. Just 2 traps were monitored in Clinton and Essex Counties
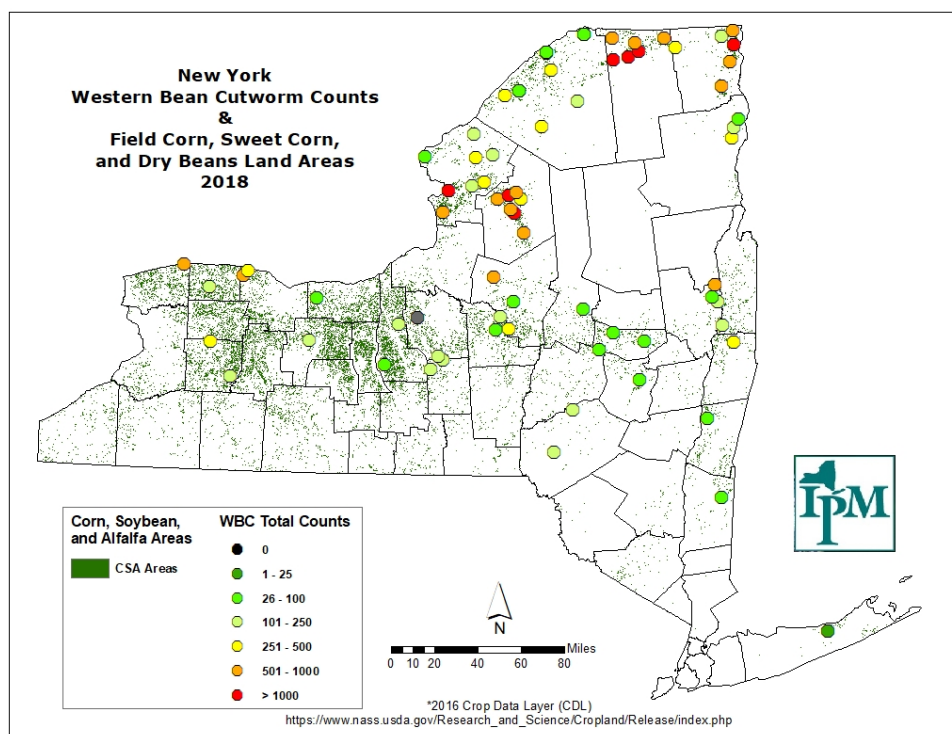
Figure 3. 2018 Western Bean Cutworm moth trap catches across New York State. Jefferson, Lewis, St. Lawrence, Franklin and Clinton Counties had high trap counts. Nine traps were monitored in Clinton and Essex Counties

Table 1. 2018 Western Bean Cutworm moth trap catches in NNY. Ten locations with highest trap catches are in bold.

County	Town	Total
Clinton	Beekmantown	670
Clinton	Champlain	673
Clinton	**Chazy**	**1344**
Clinton	Chazy	308
Clinton	Ellenburgh	156
Clinton	Mooers	230
Clinton	Peru	599
Clinton	Peru	273
Clinton	Plattsburgh	585
Essex	Westport	279
Essex	Willsboro	178
Essex	Willsboro	91
Franklin	Bombay	840
Franklin	Chateaugay	769
Franklin	**Malone**	**1136**
Franklin	**Moira**	**1750**
Franklin	**West Bangor**	**1600**

Franklin	Westville	856
Jefferson	Calcium	582
Jefferson	Clayton	87
Jefferson	**Ellisburg**	**1703**
Jefferson	Ellisburg	564
Jefferson	**Hounsfield**	**1036**
Jefferson	Pamelia	376
Jefferson	Philadelphia	185
Jefferson	Plessis	215
Jefferson	Plessis	215
Jefferson	Rutland	443
Lewis	Croghan	623
Lewis	**Denmark**	**1107**
Lewis	Harrisburg	953
Lewis	Lowville	620
Lewis	**Martinsburg**	**1097**
Lewis	New Bremen	393
Lewis	**Turin**	**1203**
Lewis	Watertown	133
St. Lawrence	Colton	206
St. Lawrence	Edwards	377
St. Lawrence	Hammond	461
St. Lawrence	South Colton	212
St. Lawrence	Heuvelton	227
St. Lawrence	**Lawrence**	**2964**
St. Lawrence	Madrid	385
St. Lawrence	Massena	89
St. Lawrence	Waddington	189